PATENT SPECIFICATION

664,694

Date of Application and filing Complete Specification : Dec. 15, 1948. No. 32504/48

Application made in United States of America on Feb. 2, 1947.

Complete Specification Published : Jan. 9, 1952.

Index at acceptance:—**Classes 19,** E; **60,** D2g(2:4); **and 61(i),** K4(c:d4).

ERRATUM

SPECIFICATION NO. 664694

In the heading on Page 1, *for* "Feb. 2, 1947" *read* "Feb. 2, 1948"

THE PATENT OFFICE,
29th May, 1952

DS 15900/1(5)/3235 150 5/52 R

[illegible] particularly described and ascertained in and by the following statement:—

This invention relates to improvements in devices used in the waxing, cleansing or polishing of floors, walls, ceilings or other surfaces by means of an appliance capable of mounting any of a variety of surface-contacting implements.

The present invention may be regarded as a further development of the inventions forming the subject of our co-pending applications Nos. 32501/48 (Serial No. 656916) and 32503/48 (Serial No. 664693).

The primary object of the invention is to provide a simple, inexpensive, sturdy appliance of this character which is readily grasped and to which a work element may be applied quickly in a manner to be firmly held in desired position.

A further object is to provide a device of this character comprising a sheet metal member bent in generally cylindrical form to provide a hand grip portion and having diverging substantially coplanar flat portions projecting oppositely therefrom and terminating in flanges bent in the direction of the handle and in converging relation with respect to the handle portion, whereby said flat portions provide bearing surfaces for applying pressure, and said flanges provide means adapted for locking engagement with a retainer and having a snap fit therewith.

[*Pric*

With these and other objects in view, the invention consists of an appliance for treating floors and the like comprising a body of resilient sheet material bent transversely to define a substantially cylindrical-shaped hand grip portion, a break in the periphery of said hand grip portion being defined by margins having outwardly extending therefrom horizontal elongated plate portions and elongated side flanges projecting upwardly from said plate portions toward said grip portion in converging relation, and a retainer formed of a resilient sheet material bent transversely to define a central portion wider than the spacing beween the outer edges of the plate portions of said body and elongated side flanges converging at an angle to grip the body flanges therebetween.

The invention having been briefly defined will now be described in greater detail reference being made to the accompanying drawings illustrating by way of example the preferred embodiment of the invention.

In the accompanying drawings:

Fig. 1 is a side view of the device;

Fig. 2 is a sectional view of the device taken on line 2—2 of Fig. 1 and illustrating the mounting of a disposable liquid applicator by the device;

Fig. 3 is a sectional view similar to Fig. 2, illustrating the use of the device to mount a pad of abrasive material, such as

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COMPLETE SPECIFICATION.

Improvements in or relating to an Appliance for Treating Floors and the like.

We, S. C. JOHNSON & SON, INC., a corporation organized under the laws of the State of Wisconsin, one of the United States of America, of 1525 Howe Street, City of Racine, State of Wisconsin, United States of America; Assignees of RALPH CLAIR KERSH, a citizen of the United States of America, of 309 Studebaker Street, City of Mishawaka, State of Indiana, United States of America; do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in devices used in the waxing, cleansing or polishing of floors, walls, ceilings or other surfaces by means of an appliance capable of mounting any of a variety of surface-contacting implements.

The present invention may be regarded as a further development of the inventions forming the subject of our co-pending applications Nos. 32501/48 (Serial No. 656916) and 32503/48 (Serial No. 664693).

The primary object of the invention is to provide a simple, inexpensive, sturdy appliance of this character which is readily grasped and to which a work element may be applied quickly in a manner to be firmly held in desired position.

A further object is to provide a device of this character comprising a sheet metal member bent in generally cylindrical form to provide a hand grip portion and having diverging substantially coplanar flat portions projecting oppositely therefrom and terminating in flanges bent in the direction of the handle and in converging relation with respect to the handle portion, whereby said flat portions provide bearing surfaces for applying pressure, and said flanges provide means adapted for locking engagement with a retainer and having a snap fit therewith.

[*Pric*

A further object is to provide a device of this character comprising a member having an integral hand grip and lateral portions projecting from the hand grip and terminating in flanges bent into converging relation and directed toward the hand grip, a retainer of generally **U**-shape adapted to have a snap fit upon the hand grip portion, and a surface contacting element carried by said retainer and locked or clamped between the margin of said **U**-shaped member and said handle flanges.

With these and other objects in view, the invention consists of an appliance for treating floors and the like comprising a body of resilient sheet material bent transversely to define a substantially cylindrical-shaped hand grip portion, a break in the periphery of said hand grip portion being defined by margins having outwardly extending therefrom horizontal elongated plate portions and elongated side flanges projecting upwardly from said plate portions toward said grip portion in converging relation, and a retainer formed of a resilient sheet material bent transversely to define a central portion wider than the spacing beween the outer edges of the plate portions of said body and elongated side flanges converging at an angle to grip the body flanges therebetween.

The invention having been briefly defined will now be described in greater detail reference being made to the accompanying drawings illustrating by way of example the preferred embodiment of the invention.

In the accompanying drawings:

Fig. 1 is a side view of the device;

Fig. 2 is a sectional view of the device taken on line 2—2 of Fig. 1 and illustrating the mounting of a disposable liquid applicator by the device;

Fig. 3 is a sectional view similar to Fig. 2, illustrating the use of the device to mount a pad of abrasive material, such as

steel wool;

Fig. 4 is a sectional view of the device, illustrating the use of the device to mount a squeegee holder;

Fig. 5 is a sectional view of the device, illustrating the application to the device of an elongated handle member and the mounting of a brush element thereby;

Fig. 6 is a sectional view similar to Fig. 2, illustrating the use of the device to mount an abrasive material, such as sandpaper;

Fig. 7 is a fragmentary sectional view of the device, illustrating the use of the device to mount a different type of liquid-applying pad.

Referring to the drawings, and particularly to Figs. 1 and 2 thereof, the numeral 10 designates a body member and the numeral 12 designates a retainer member. Both of these members are formed from sheet metal of sufficient thickness to retain their shape and also possessing the property of at least a limited amount of resilience.

The central portion of the member 10 is bent transversely on a curve of large radius at 14 to provide an elongated curved portion from which portions 16 extend in inwardly converging relation. The curvature of the member 14 may be part cylindrical, and the dimensions of the portions 14 and 16 are such that they provide an elongated hand grip portion which may be held comfortably in the hand. The portions 16 merge at the bends 18 in spaced relation with laterally outwardly projecting flat portions 20 which lie substantially in the same plane or, as best shown in Fig. 2, are disposed at a slight angle with the outer ends of said flat portions 20 positioned downwardly and outwardly with respect to the bends 18 and the inner margins of the portions 20. The plate forming the member 10 terminates at its opposite longitudinal margins in flanges 22 which are bent upwardly and inwardly in converging relation, terminating spaced from the portions 16 of the handle. If desired, the part 10 may carry a tubular socket 24 centrally of its length and inclined relative to the central plane of the member 10. The socket 24 is fixedly secured to the member 10 at the bent portion 14 thereof and communicates with an opening in the portion 14.

The retainer 12 preferably comprises a plate 26 of substantially the same length as the member 10 which is bent transversely in concavo-convex form on an arc of large radius. The width of the plate 26 is greater than the width of the member 10 measured at the junction between the parts 20 and 22 of the member 10. The plate 26 is bent at 28, and flanges 30 form the margins of said plate, said flanges being arranged in converging relation with their free inner ends spaced apart a distance substantially equal to the spacing of the tips of the flanges 22 on the handle portion 10. If desired, the flanges 30 may be formed of a double thickness of the material by providing a return bend of the material, thereby reinforcing and strengthening said flanges.

The arrangement of these parts is such that the retainer 12 may be applied to the body portion 10 either by longitudinal sliding of the parts or by a snap fit. It will be observed in this connection that the formation of the body member 10 with its spaced converging portions 16 provides resilience of the body 10 and permits the side portions 22 thereof to be sprung inwardly to permit the leading or free edges of the flanges 30 to snap thereover when the parts are applied together in a direction perpendicular to the face of the retainer 12. The advantages of the snap-on type of application will be referred to hereinafter. It will be apparent also that the curved plate 26 of the retainer constitutes a spring member and that the curvature of this member may be such that it exerts an inward spring pressure acting against the outward spring pressure of the body 10 when the parts are assembled, thereby insuring a snug tight interlock of the parts when assembled. It will further be observed that the parts are so proportioned that when the outer faces of the flanges 22 of the body 10 fit between the flanges 30 and bear against the inner faces thereof, the bent portions 21 of the body between the body parts 20 and 22 will be urged into engagement with the plate 26 in inwardly spaced relation to the bends 28 of the retainer 12. Thus four points of continuous longitudinal engagement are provided between the body 10 and the retainer 12, two such longitudinal lines of engagement being between the flanges 22 and 30, and the other two lines of longitudinal engagement being between the bends 21 and the opposite sides of the plate 26. This serves to solidly connect the parts together, to prevent loose play therebetween, and to provide for multiple continuous lines of engagement at which the pressure applied to the handle or body part 10 is transmitted to the retainer part 12.

The embodiment best shown in Fig. 2 illustrates the mounting upon the device of an applicator for a liquid material. This applicator may comprise a plurality of sheets of disposable fibrous absorbent tissue 32 superimposed in pad form and bearing against the outer face of the plate 26 of the retainer in continuous engagement conforming to the contour of the retainer

plate 26. The tissues may be formed of any material found suitable, of which a number of types are now available on the market and which are commonly used as cleaning tissues, facial tissues, disposable handkerchiefs and the like. These tissues may be formed of paper stock or cellulose stock and are bonded together in sheet form and are characterized by a low density and high porosity which retains them highly absorbent. Such tissues have only a very low tensile strength and readily disintegrate when wetted so that they are readily disposable. It will be understood that the absorbent pad may also be formed of other material, such as felted wool or cotton padding or other absorbent material of low tensile strength. The absorbent pad 32 may be of any desired thickness which is preferably uniform throughout its extent, said pad being of a length substantially equal to the length of the retainer 12, although it may be either shorter than said retainer, or, in the form illustrated in Fig. 1, it may be slightly longer than said retainer and project beyond the ends thereof. The absorbent pad 32 is held to place by a cover sheet 34 of the same or greater length than the pad 32 and of greater width than said pad. The cover sheet 34 is formed of flexible absorbent material of greater tensile strength than the pad material 32. The sheet 34 may comprise a woven fabric sheet, such as a sheet of cloth, preferably cotton cloth, or it may be formed of synthetic material. One such synthetic material which is now available on the market, and which possesses the requisite porosity and strength, is felted from cellulose or paper fibres and vegetable fibres, such as cotton fibres, in such a manner as to provide the strength desired without substantial sacrifice of porosity. In other words, the sellulose fibres insure porosity and the long vegetable fibres, such as cotton fibres, impart strength to the sheet. These two maerials are cited as illustrative, it being understood that any flexible sheet material having substantial tensile strength and porosity permitting it to absorb liquid may be used. The pad material 32 is placed upon the cover sheet at the centre thereof so that the side margins of the sheet projecting beyond said pad may be passed around the flanges 30 of the retainer with the terminal portions 36 thereof lying upon the inner face of the plate 26 of the retainer 12, it being understood that the pad material 32 will bear against and be in register with the outer surface of the plate 26 of the retainer. When the retainer 12 with the pad 32, 34 applied thereto as described is applied to the body portion 10 by a snap interlock action, the engagement of the body 10 with the margins of the cover sheet 34 will serve to draw said cover sheet tight incident to the assembly of the body and the retainer, thus insuring that the pad 32 will be clamped and retained snugly between the retainer plate 26 and the cover sheet 34. An alternative construction may also be used, in which two cover sheets 34 have the pad positioned therebetween, and these sheets may be stitched or secured together around the margin of the pad 32 to positively confine said pad.

A device of the character illustrated in Fig. 2 and constructed as described above has particular utility for household use in the application of wax, polishing material and other liquids to be applied to a work surface. The pad 32, 34 may be wetted by the liquid and will absorb the same. Then as the assembled device is used, the application or pressure thereto will cause the liquid to be expelled from the pad uniformly for uniform application of the material to the surface being treated. The pad 32 forms a reservoir and the sheet 34 forms the surface by which the material is supplied. The strength of the sheet 34 and the snug fit of the pad 32 between the same and the plate 26 holds the pad material 32 in desired position bearing flat against the plate 26 and any tendency toward wadding of the pad material 32 is avoided. The cover sheet 34 sustains the forces incident to the friction of the pad assembly with the work surface and provides all strength necessary to hold the pad 32 in proper position. Furthermore, continuous longitudinal clamping of the margins of the sheet 34 is provided at four points. Thus each of the two margins of the sheet 34 is clamped continuously for the full length of and between the flanges 22 and 30 and between the bend 21 and the plate 26. The advantage of this device is that, when the use of the device as an applicator has been completed, the pad may readily be removed and disposed of. A pad formed of this material is inexpensive and a number of pads can therefore be supplied with each container of the liquid material to be applied. Removal of the pad can be effected by separating the parts 10 and 12, as by sliding them longitudinally with respect to each other, so that when the retainer 12 is free from the body 10, the pad assembly 32, 34 may be removed from the retainer easily and quickly and the outer sheet may continue to serve as a retainer for the pad filler when handled between the time it is removed and the time it is disposed of.

Another use for which the device it particularly well suited is illustrated in Fig. 3, wherein the device mounts a pad 40 of abrasive material, such as steel wool. In this instance the pad 40 is of any selected length, preferably equal to or substantially

equal to the length of the retainer 12 and is of a width permitting is opposite side portions to be wrapped around the flange 30 of the retainer with its side margins 42 bearing against the inner face of the plate 26 of the retainer. Pads of this size and construction are readily available on the market and may be applied to the retainer 12 and then mounted upon the body 10 in the same manner described above by a snap action which insures a snug tight fit of the pad against the outer face of the plate 26 of the retainer. In this connection it might be mentioned that the usual characteristic of substantial independence of the steel wool filaments and their substantially parallel arrangement in a pad imposes certain limitations upon usage of pads of ordinary steel wool mounted in this device. However, steel wool pads are now available on the market in which the filaments thereof extend in divergent relations so as to give to the pad substantial tensile strength in all directions in its plane. Such pad material is particularly suitable for use with this device. One of the advantages when used for steel wool, which similarly is an advantage when the device is used as a wax applicator, is that the user may grasp the handle portion 14, 16 of the body spaced from the working material carried by the device so that the user is not subjected to the danger of cutting his hand by contact with the steel pad or does not require wetting of his hand incident to the use of the device of Fig. 2 as a liquid applicator.

The device may also be used for the purpose of gripping and mounting a thin sheet of material, such as sandpaper, as illustrated in Fig. 6. In this instance the sandpaper is of a length substantially equal to the length of the retainer 12 and of a width greater than said retainer. The sheet of sandpaper 50 has its side margins folded around the flanges 30 of the retainer and its terminal marginal portions 52 bearing against the inner surface of the plate 26 of the retainer. The snap connection of the retainer having the sandpaper so applied thereto to the body member 10 insures a tight mounting of the sandpaper upon the assembled unit. Observe in this connection that the abrasive surface of the sandpaper will contact the handle portions 10 at the flanges 22 and the bends 21 thereof, and thus resist longitudinal sliding displacement of the assembled parts. The same characteristic will obviously apply with reference to the embodiment illustrated in Fig. 3, and to the extent that any antifriction properties exist in the cover sheet 34 in the Fig. 2 embodiment, it will apply there also.

The use of the device is not limited to the mounting of pads and sheet materials as mentioned above. Thus the device may be used to mount a tool. Fig. 4 illustrates the use of the device to mount an elongated squeegee blade 60 comprising an elongated flat strip of rubber. In this instance the form of the retainer 12′ is modified by providing flat plate portions 26′ from which the said flanges 30 project and by incorporating a clamp within the retainer 12′. The clamp in this case is formed by bending the plate portion 26′ at its centre to provide integral outwardly projecting jaws 62 which serve to clamp and grip the inner or upper margin of the squeegee blade 60. The retainer 12′ used in this instance is a one-purpose retainer and may be supplied with the body 10 and the conventional form of the retainer 12 as a part of a set when purchased.

Fig. 5 illustrates the application of the invention for the purpose of mounting another type of tool, here shown as a brush, having a rigid back plate 70 mounting brush bristles 72. The rigid back is here shown as having applied thereto a plate 74 fixedly secured thereto by suitable means such as wood screws 76, and provided with marginal upwardly converging flanges 78. The spacing of the flanges is such that they are adapted to fit around the flanges 22 of the body 10 in the manner described above either by a snap action or a slide action. This figure of the drawing also illustrates the use of an elongated cylindrical handle member 80 whose inner end is mounted in the socket 24 carried by the body 10, thus permitting the application of the device for use as a part of the head portion of a long handled tool. It will be understood that Fig. 5 is illustrated only of this use and that other tool head elements than the brush illustrated may be used. Likewise it will be apparent that a long handle, such as the handle 80, may be applied to any of the other devices described and illustrated herein in the event the use of a long handle therewith becomes desirable.

Still another manner in which the device may be used is illustrated in Fig. 8. In this case, a pad 81 is formed of felted wool or a pad of other suitably absorbent material. This pad 81 is secured to a tube 82 formed of cloth, paper or any other suitable flexible sheet material. The pad 81 may be secured to the tube 82 by means of staples, glue or the like. The cross-sectional size of the tube is large enough to permit it to fit freely around the retainer 12, and to permit the flanges 30 of the retainer to receive and interlock with the flanges 22 of the body 10. The assembly of the parts 10 and 12 serves to draw the tube 82 taut into firm non-slipping engagement with the interlocked parts 10, 12, it being understood that the cross-sectional size of the

tube is carefully selected to insure that the tube is so drawn taut by parts 10, 12. This pad has the advantage of easy assembly and mounting, by virtue of the tube 82, and may be provided with a tab (not shown) or other means to facilitate removal thereof from the retainer when its use is completed. This pad may be made of inexpensive material of disposable character.

While the preferred embodiment of the invention has been illustrated and described herein, it will be understood that changes may be made in the construction within the scope of the appended claims without departing from the scope of the invention.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare:—

1. An appliance for treating floors and the like comprising a body of resilient sheet material bent transversely to define a substantially cylindrical-shaped hand grip portion, a break in the periphery of said hand grip portion being defined by margins having outwardly extending therefrom horizontal elongated plate portions and elongated side flanges projecting upwardly from said plate portions toward said grip portion in converging relation, and a retainer formed of a resilient sheet material bent transversely to define a central portion wider than the spacing between the outer edges of the plate portions of said body and elongated side flanges converging at an angle to grip the body flanges therebetween.

2. An appliance as in Claim 1 wherein the central portion of said retainer is transversely curved, and said body and retainer have spaced longitudinal bearing engagement at both sides thereof along the flanges of said parts and along the margins of said central retainer portion and the plate portion of said body.

3. An appliance as in Claim 1 or 2 further comprising a surface treating member carried by said retainer and positioned in pressure transfer relation to the outer face of the central portion of said retainer.

4. An appliance as in Claim 3 wherein the surface treating member spans said retainer and has flexible marginal portions folded around the flanges of said retainer and clamped between the same and said body flanges.

5. An appliance as in Claim 3 or 4 wherein the surface treating member comprises a pad of absorbent material bearing against the outer surface of the central portion of said retainer and a flexible cover sheet of greater width than said pad having marginal portions folded around the flanges of said retainer and clamped between the flanges of said retainer and body.

6. An appliance as in any of Claims 1—5, said retainer being channel-shaped and having inwardly converging sides adapted to receive and grip the side portions of said body therebetween.

7. An appliance as in any of Claims 3—6 wherein said surface treating member comprises a pad unit adapted to bear against the outer surface of said retainer and including a pad member and a flexible tubular member secured to said pad member, said tubular member being of a cross-sectional size to fit freely around said retainer and to be drawn taut upon insertion of the side portion of said body within said retainer in interlocked relation thereto.

8. An appliance for treating floors and the like having its parts constructed, arranged and adapted to operate substantially as hereinbefore described with reference to any of the figures of the accompanying drawings.

Dated this 15th day of December, 1948.

HASELTINE, LAKE & CO.,
28, Southampton Buildings,
Chancery Lane, London, England,
and
19-25, West 44th Street, New York 18,
New York, U.S.A.
Agents for the Applicants.

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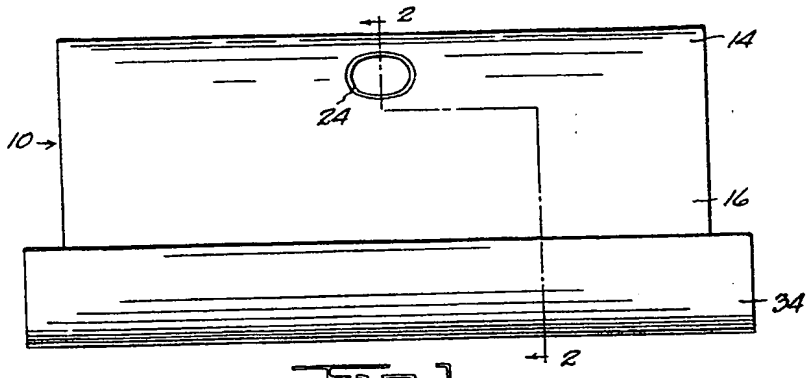


FIG. 1.

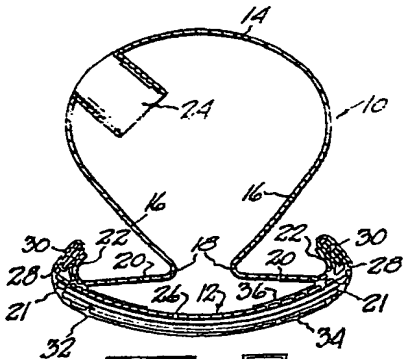


FIG. 2

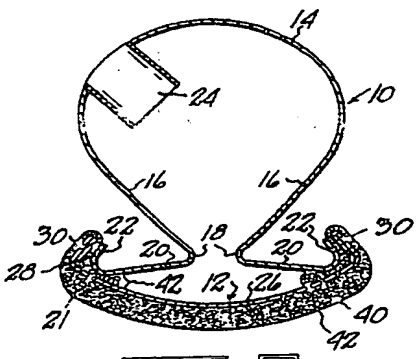


FIG. 3

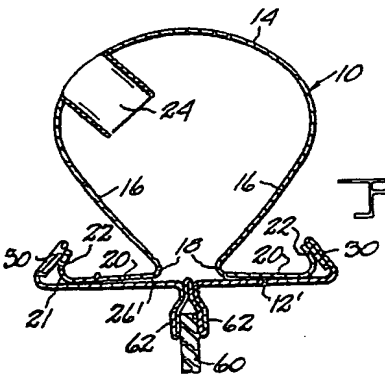
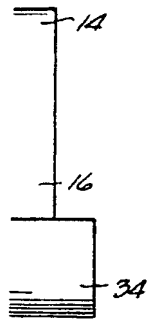


FIG. 4



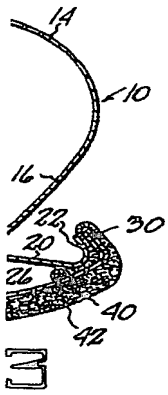


FIG. 3

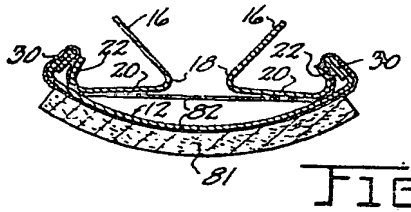


FIG. 7

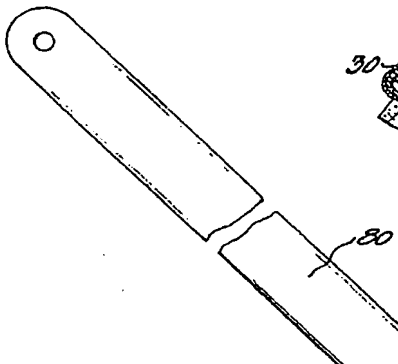
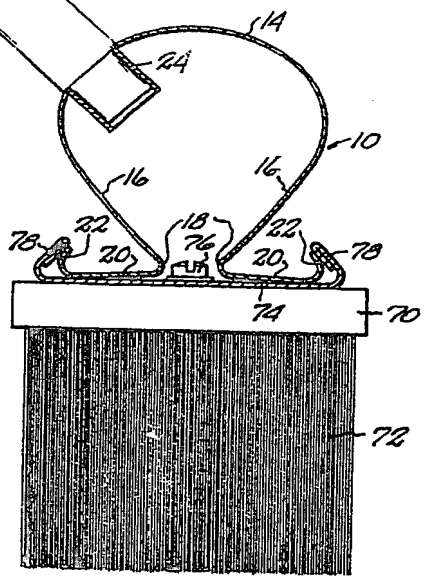


FIG. 5



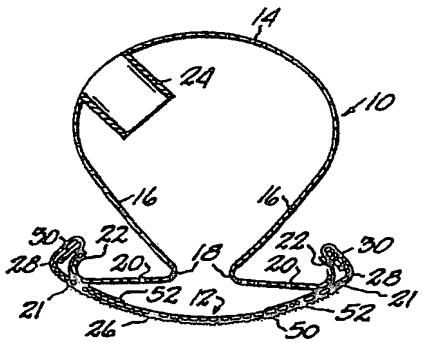


FIG. 6

H.M.S.O. (M.F.P.)

664.694 COMPLETE SPECIFICATION

2 SHEETS

SHEET 1

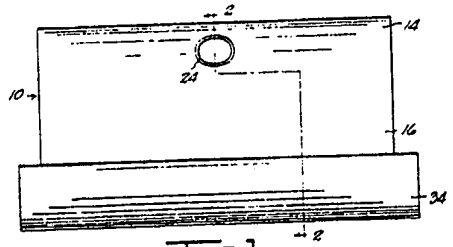


FIG.1.

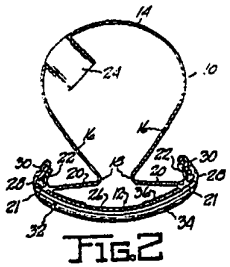


FIG.2

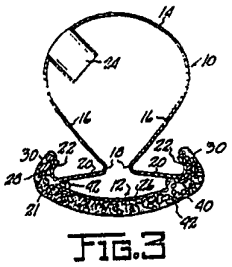


FIG.3

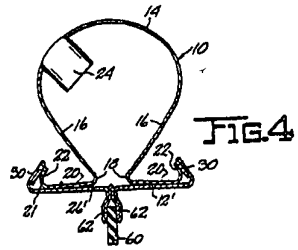


FIG.4

SHEET 2

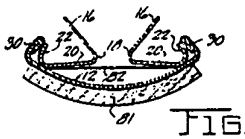


FIG.7

FIG.5

FIG.6

H.M.S.O.(M.F.P.)